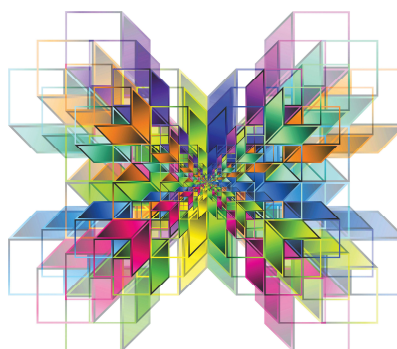
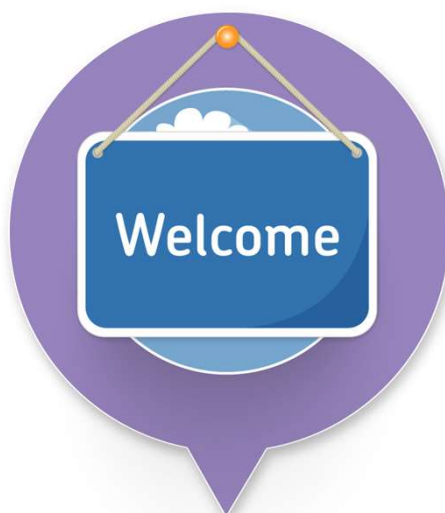


## GCSE Maths Marking mocks with confidence

Alex Lacey  
Autumn 2022



Welcome



## Introduction

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- Outline for the event:
  - General principles of marking
  - Break
  - Marking exercises
  - Q & A

## Types of marks

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- M (eg M1): Method marks for a correct method that *could* lead to a correct answer.
- A (eg A1): Accuracy marks are awarded for correct answers following a correct method. It is not always necessary to see the method to award the accuracy mark(s).
- B (eg B1, B2): Marks awarded independent of method, such as measuring the length of a line. B marks are also a type of accuracy mark so they cannot be awarded, for example, if the measurement is incorrect.
- Ft (eg B1ft or A1ft): Follow through marks, awarded as the correct final answer following a mistake in an earlier step.

## Types of marks

- SC (eg SC1, SC2): Special case marks. Awarded for some common misinterpretation which has some mathematical worth. SC1 means 1 mark, SC2 means 2 marks and so on. Students don't get M marks on top of this.
- M dep (eg M1dep): A method mark that can only be awarded if the previous mark has been awarded.
- B dep (eg B1dep): A mark that can only be awarded if a previous independent mark has been awarded.

## Awarding method marks (M)

A correct method shown will always get the mark, irrespective of their answer.

For example,

9 (b) An Adult membership fee is £120

A Junior membership fee is  $\frac{1}{5}$  of the Adult fee.

Work out the **total** membership fee for 2 Adults and 3 Juniors.

[3 marks]

Q	Answer	Mark	Comments
	$2 \times 120$ or 240	M1	oe
	$(3 \times) \frac{1}{5} \times 120$ or 24 or 72	M1	oe
	312	A1	SC2 528

## Awarding method marks (M)

9 (b) An Adult membership fee is £120

A Junior membership fee is  $\frac{1}{5}$  of the Adult fee.

Work out the **total** membership fee for 2 Adults and 3 Juniors.

[3 marks]

**M 1**  $£120 \times 2 = 260$

**M 1**  $120 \div 5 = 50$

$2 \times £120 + 3 \times 50$

Answer £ 410 **A 0**

9 (b) An Adult membership fee is £120

A Junior membership fee is  $\frac{1}{5}$  of the Adult fee.

Work out the **total** membership fee for 2 Adults and 3 Juniors.

[3 marks]

$2 \text{ adults} = £260$  **M 0**

$1 \text{ junior} = £50$  **M 0**

Answer £ 410 **A 0**

## Awarding method marks (M)

9 (b) An Adult membership fee is £120

A Junior membership fee is  $\frac{1}{5}$  of the Adult fee.

Work out the **total** membership fee for 2 Adults and 3 Juniors.

[3 marks]

**M 1**  $\begin{array}{r} 120 \\ 120 \\ \hline 240 \end{array}$

**M 1**  $\begin{array}{r} 36 \\ 5 \overline{)120} \\ \underline{36} \\ 84 \\ \underline{84} \\ 0 \end{array}$

Answer £ 308 **A 0**

9 (b) An Adult membership fee is £120

A Junior membership fee is  $\frac{1}{5}$  of the Adult fee.

Work out the **total** membership fee for 2 Adults and 3 Juniors.

[3 marks]

Answer £ 240 **M 1**

## Dependent marks (M1dep)

They must first score a previous mark before they qualify for this mark.

For example, Nov 2020, 8300/2F, Question15

15 Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

Cement costs £0.19 per kg

Sand costs £0.07 per kg

Tomasz uses 150 kg of cement to make some mortar.

Work out the total cost of the mortar.

[3 marks]

Alternative method 1		
$150 \times 0.19$ or 28.5(0)	M1	oe eg working in pence
$4 \times 150 \times 0.07$ or 42	M1	oe eg working in pence 70.5 implies M2
70.50	A1	allow £70.50p
Alternative method 2		
$0.19 + 4 \times 0.07$ or 0.47	M1	oe eg working in pence
$150 \times \text{their } 0.47$ or 70.5	M1dep	oe eg working in pence
70.50	A1	allow £70.50p

## Dependent marks (M1dep)

15 Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

Cement costs £0.19 per kg

Sand costs £0.07 per kg

Tomasz uses 150 kg of cement to make some mortar.

Work out the total cost of the mortar.

[3 marks]

$$\begin{array}{r} 0.19 + 2.87 = 3.06 \\ 0.07 \times 4 = 2.87 \\ 3.06 \times 150 = 459 \\ \text{Mdep 1} \end{array}$$

Answer £ 459 A 0

15 Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

Cement costs £0.19 per kg

Sand costs £0.07 per kg

Tomasz uses 150 kg of cement to make some mortar.

Work out the total cost

[3 marks]

$$\begin{array}{r} 150 \times 4 \\ \text{M 0} \end{array}$$

Answer £ 600 A 0

## Dependent marks (M1dep)

15 Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

Cement costs £0.19 per kg

Sand costs £0.07 per kg

Tomasz uses 150 kg of cement to make some mortar.

Work out the total cost of the mortar.

[3 marks]

\_\_\_\_\_ 15

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Answer £ 70.50 **M 1**  
**Mdep 1**  
**A 1**

Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

Cement costs £0.19 per kg

Sand costs £0.07 per kg

Tomasz uses 150 kg of cement to make some mortar.

Work out the total cost of the mortar.

[3 marks]

70.5 **M 1**

**Mdep 1**

**A 0**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Answer £ \_\_\_\_\_

## B marks

B marks are in the mark schemes for things that can be worked out without a method eg, measuring a line, a bearing, or stating a fact.

14 (a) Use your calculator to work out  $9.95^2 \times 29.8$

Give your answer as a decimal.

Write down your full calculator display.

[1 mark]

14(a)	2950.2745(00...)	B1	
	Additional Guidance		
	2'950.2745 or 2,950.2745		B1
	2.950.2745		B0
	Allow correct rounding or truncation once full value seen		

## B marks

- 14 (a) Use your calculator to work out  $9.95^2 \times 29.8$   
Give your answer as a decimal.  
Write down your full calculator display.

[1 mark]

Answer 2950.2745 **B 1**

- 14 (a) Use your calculator to work out  $9.95^2 \times 29.8$   
Give your answer as a decimal.  
Write down your full calculator display.

[1 mark]

2950.2745

Answer 2950.3 **B 1**

## Accuracy marks (A or B)

Awarded for reaching the correct (final) answer.

M1		M1	B1	or	M1	
A1	M1	M1	M1	40.5(0) and 20		
				or		
				45 and 24		
				or		
				30 : 16		
				or		
				45 : 24		
	M1dep	M1dep	A1ft	45 and 24 chosen	A1	eg 45 : 24 is the final ratio seen
A1		A1		6	A1	

## Accuracy marks (A or B)

$1.5 \times 1000$ or 1500	M1	oe
their 1500 – 650 or 850	M1dep	oe eg 1000 – 650 + 500
850 millilitres	A1	oe eg 850 ml

12 A bottle contains 1.5 litres of water.  
650 millilitres of the water is poured into a jug.  
How much water is left in the bottle?  
State the units of your answer.

[3 mark]

$1.5 - 650 = 850$  **M 1**  
**Mdep 1**  
  
Answer 850ml **A 1**

12 A bottle contains 1.5 litres of water.  
650 millilitres of the water is poured into a jug.  
How much water is left in the bottle?  
State the units of your answer.

[3 marks]

**M 1**  
 $1.5 \times 1000 = 1500$   
 $1500 - 650$   
**Mdep 1**  
  
Answer 14350ml **A 0**

## “Their”

An incorrect evaluation of any correct method may be used in the next step.

For example, Nov 2019 8300/2F, Question 10

10 A group of students were asked to name their favourite burger.  
The pictogram shows the results.  
The key is missing.

Chicken	
Beef	
Turkey	
Veggie	

40 students said Veggie.

How many students said Chicken?

[3 marks]

$40 \div 5$ or 8	M1	may be seen on diagram eg 8 in one of the circles or as a key implied by $\frac{1}{4} = 4$
their 8 $\times$ 3.5 or their 8 + their 8 + their 8 + $\frac{\text{their 8}}{2}$	M1dep	oe calculation that would evaluate to 28 eg $8 + 8 + 8 + 4$ or $3 \times 8 + 4$ or their $4 \times 7$
28	A1	



## “Their”

- 10 A group of students were asked to name their favourite burger.  
The pictogram shows the results.  
The key is missing.

Chicken	● ● ● ●
Beef	● ● ● ● ● ●
Turkey	●
Veggie	● ● ● ● ●

40 students said Veggie.

How many students said Chicken?

**M 1** **3** marks  
 $40 \div 5 = 8$   
 $8 + 8 + 8 + 8 + 8$  **M dep 1**  
 Answer **21 A 0**

- 10 A group of students were asked to name their favourite burger.  
The pictogram shows the results.  
The key is missing.

Chicken	● ● ● ●
Beef	● ● ● ● ● ●
Turkey	●
Veggie	● ● ● ● ●

40 students said Veggie.

How many students said Chicken?

**M 0** **3** marks  
 $3.5 \times 6$   
 Answer **21 A 0**

## “Their”

- 10 A group of students were asked to name their favourite burger.  
The pictogram shows the results.  
The key is missing.

Chicken	● ● ● ●
Beef	● ● ● ● ● ●
Turkey	●
Veggie	● ● ● ● ● ● <b>M 0</b>

40 students said Veggie.

How many students said Chicken?

**M 0** **3** marks  
 $3.5 \times 6$   
 Answer **21 A 0**

## "Their"

For example, June 2022, 8300/2F, Question 11a

11 Nihal has savings of £168

He uses  $\frac{5}{7}$  of his savings to buy sports equipment.

11 (a) Assume that he will use  $\frac{1}{3}$  of the **rest** of the money to buy a shirt.

How much of his savings, in £, will he have left?

[3 marks]

$\frac{5}{7} \times 168$ or 120	M1	oe eg $168 \div 7 \times 5$ implied by 48 allow 0.71(4...) or 71(4...) % for $\frac{5}{7}$
$\frac{1}{3} \times (168 - \text{their } 120)$ or $\frac{1}{3} \times 48$ or 16 or $(1 - \frac{1}{3}) \times (168 - \text{their } 120)$ or $(1 - \frac{1}{3}) \times 48$	M1	oe must subtract their 120 from 168 with 10 < their 120 < 150 allow 0.33(3...) or 33(3...) % for $\frac{1}{3}$ allow 0.66(6...) or 0.67 or 66(6...) % or 67% for $(1 - \frac{1}{3})$ 16 is M1M1
32(,00p)	A1	SC2 80 SC1 40

11 Nihal has savings of £168

He uses  $\frac{5}{7}$  of his savings to buy sports equipment.

11 (a) Assume that he will use  $\frac{1}{3}$  of the **rest** of the money to buy a shirt.

How much of his savings, in £, will he have left?

[3 marks]

$\frac{5}{7} \times 168 = 120$   
 $168 - 120 = 48$   
 $\frac{1}{3} \times 48 = 16$   
 $48 - 16 = 32$   
 Answer £ 32

## "Their"

11 Nihal has savings of £168

He uses  $\frac{5}{7}$  of his savings to buy sports equipment.

11 (a) Assume that he will use  $\frac{1}{3}$  of the **rest** of the money to buy a shirt.

How much of his savings, in £, will he have left?

[3 marks]

$168 \div 7 = 24$   
 $24 \times 5 = 120$   
 $168 - 120 = 48$   
 $48 \div 3 = 16$   
 $48 - 16 = 32$

Answer £ 32

## Follow through (ft)

Sometimes mark schemes will state A1ft or B1ft, which means you follow through incorrect work and award this mark.

For example, Nov 2018, 8300/3F, Question 14a

- 14 (a)** The term-to-term rule of a sequence is  
The first term of the sequence is  $-24$   
Work out the next two terms.

Add 8 and divide by 2

[2 marks]

-8	B1	
0	B1ft	ft their -8

## Follow through (ft)

- 14 (a)** The term-to-term rule of a sequence is

Add 8 and divide by 2

The first term of the sequence is  $-24$

Work out the next two terms.

[2 marks]

$$\frac{(-24 + 8)}{2} = -16$$

**B 0**

Answer  $-16$  and  $-4$  **Bft 1**

## Follow through (ft)

For example, Nov 2019, 8300/3F, Question 30

Work out

cube root of 512 : reciprocal of 0.4

Give your answer in the form  $n : 1$

[3 marks]

8	B1	
$\frac{1}{0.4}$ or $\frac{10}{4}$ or 2.5 or $\frac{1}{\frac{2}{5}}$ or $\frac{5}{2}$ or $2\frac{1}{2}$	M1	$8 \times 0.4$ or $3.2$ implies B1M1 $16 : 5$ or equivalent ratio implies B1M1
$3.2 : 1$ or $\frac{16}{5} : 1$ or $3\frac{1}{5} : 1$	A1ft	ft B0M1

## Follow through (ft)

30

Work out

cube root of 512 : reciprocal of 0.4

Give your answer in the form  $n : 1$

[3 marks]

$$\sqrt[3]{512} = 8 \quad \text{B 0}$$

$$\frac{1}{0.4} = 2.5 \quad \text{M 1}$$

Answer  $2.4 : 1$  Aft 1

B 1

30

Work out

cube root of 512 : reciprocal of 0.4

Give your answer in the form  $n : 1$

[3 marks]

$$8 : 0.4 \rightarrow \div 0.4 \rightarrow 20 : 1 \rightarrow \div 0.4 \quad \text{M 0}$$

Answer  $20 : 1$  A 0

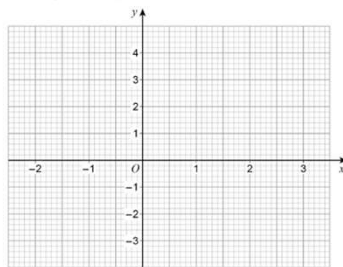
## Follow through (ft)

For example, Jun 2017, 8300/2F, Question 26a

26 (a) Complete the table of values for  $y = x^2 - x - 2$  [2 marks]

x	-2	-1	0	1	2	3
y			-2	-2		4

26 (b) Draw the graph of  $y = x^2 - x - 2$  for values of x from -2 to 3 [2 marks]



26(a)	<table><tr><td>x</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>4</td><td>0</td><td>-2</td><td>-2</td><td>0</td><td>4</td></tr></table>	x	-2	-1	0	1	2	3	y	4	0	-2	-2	0	4	B2	B1 1 or 2 values correct
	x	-2	-1	0	1	2	3										
y	4	0	-2	-2	0	4											
5 or 6 points plotted correctly	M1	Correct or <b>ft their table in (a)</b> Tolerance of $\pm 1$ small square Points can be implied by graph passing through them															
Correct smooth parabolic curve and y-coordinate of minimum point in the range $-2.5 \leq y \leq -2.1$	A1	Tolerance of $\pm 1$ small square for the six <b>correct</b> points from the table No further tolerance for the minimum															

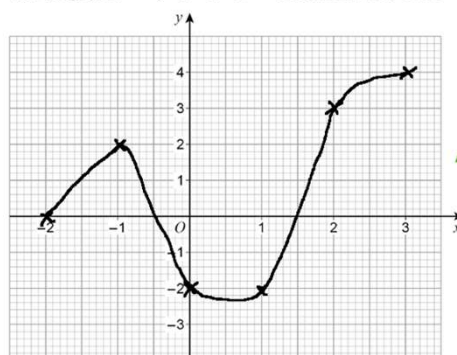
## Follow through (ft)

26 (a) Complete the table of values for  $y = x^2 - x - 2$  [2 marks]

x	-2	-1	0	1	2	3
y	0	2	-2	-2	3	4

**B 0**

26 (b) Draw the graph of  $y = x^2 - x - 2$  for values of x from -2 to 3 [2 marks]



**M 1**  
**A 0**

## Follow through (ft)

If the method is shown, you can **always** follow through for the next step, but not for the final answer.

6 A shop has this offer.

At the shop, dresses cost £42 each.

Amira buys 3 dresses.

Bobbi buys 5 dresses.

£5 reduction if you spend more than £100  
or  
£10 reduction if you spend more than £150  
or  
£20 reduction if you spend more than £200

How much **more** than Amira does Bobbi pay?

[3 marks]

3 × 42 or 126 or 5 × 42 or 210	M1	implied by 121 or 190 or 84
3 × 42 – 5 or 121 or 5 × 42 – 20 or 190	M1dep	oe
69 or 69.00(p)	A1	69p is A0

## Follow through (ft)

6 A shop has this offer.

£5 reduction if you spend more than £100  
or  
£10 reduction if you spend more than £150  
or  
£20 reduction if you spend more than £200

At the shop, dresses cost £42 each.

Amira buys 3 dresses.

Bobbi buys 5 dresses.

How much **more** than Amira does Bobbi pay?

[3 marks]

**M 1**  
 $3 \times 42 = 126$   
 $126 - 5 = 121$   
**Mdep 1**

Answer £ \_\_\_\_\_

6 A shop has this offer.

£5 reduction if you spend more than £100  
or  
£10 reduction if you spend more than £150  
or  
£20 reduction if you spend more than £200

At the shop, dresses cost £42 each.

Amira buys 3 dresses.

Bobbi buys 5 dresses.

How much **more** than Amira does Bobbi pay?

[3 marks]

$3 \times 42 = 126$  **M 1**  
 $126 - 5 = 121$  **M 0**

Answer £ \_\_\_\_\_

## Special case marks (SC1, SC2 etc)

Only award if it says so in the scheme. You either award this/these mark(s) or method marks, **not** both.

For example, June 2022, 8300/2F, Question 11a

11	Nihal has savings of £168 He uses $\frac{5}{7}$ of his savings to buy sports equipment.		
11 (a)	Assume that he will use $\frac{1}{3}$ of the <b>rest</b> of the money to buy a shirt. How much of his savings, in £, will he have left?	[3 marks]	
		$\frac{5}{7} \times 168$ or 120 $\frac{1}{3} \times (168 - \text{their } 120)$ or $\frac{1}{3} \times 48$ or 16 or $\left(1 - \frac{1}{3}\right) \times (168 - \text{their } 120)$ or $\left(1 - \frac{1}{3}\right) \times 48$ 32(00p)	M1 M1 A1 SC2 80 SC1 40



## Special case marks (SC1, SC2 etc)

11	Nihal has savings of £168 He uses $\frac{5}{7}$ of his savings to buy sports equipment.		
11 (a)	Assume that he will use $\frac{1}{3}$ of the <b>rest</b> of the money to buy a shirt. How much of his savings, in £, will he have left?	[3 marks]	
	$\frac{168}{7} = 24$ M1 $24 \times 5 = 120$ 1 mark overall Answer £ 40 SC1		
11	Nihal has savings of £168 He uses $\frac{5}{7}$ of his savings to buy sports equipment.		
11 (a)	Assume that he will use $\frac{1}{3}$ of the <b>rest</b> of the money to buy a shirt. How much of his savings, in £, will he have left?	[3 marks]	
	$168 \div 7 = 24$ $24 \times 5 = 120$ $168 - 120 = 48$ $48 \div 3 = 16$ $48 - 16 = 32$ Answer £ 32 SC2		

## Misreads

Award all method marks as usual (unless the scheme states to not allow misreads). They will only lose the accuracy mark(s) (A or B marks).

For example, Nov 2017, 8300/2F, Question 8

8	A dry cleaning shop has the following offers.	 <p><b>Suit</b></p> <p>Normal price £12.50 1st suit normal price 2nd suit half price</p>	 <p><b>Dress</b></p> <p>Normal price £9.75 Three for the price of two</p>	$12.5(0) + 12.5(0) + 2$ or $12.5(0) + 6.25$ or $12.5(0) \times 1.5$ or 18.75	M1	oe Cost of 2 suits
				$9.75 \times 4$ or $9.75 \times \frac{2}{3} \times 6$ or $6.5(0) \times 6$ or 39(.00)	M1	oe eg $9.75 \times 6 - 9.75 \times 2$ or $58.5(0) - 19.5$ Cost of 6 dresses
				their 18.75 + their 39(.00)	M1dep	dep on at least M1 awarded Must be adding their suit(s) and their dress(es) May be implied by final answer
				57.75	A1	Accept £57.75p

## Misreads

8 A dry cleaning shop has the following offers.



Work out the total price for 2 suits and 6 dresses.

[4 marks]

$$12.50 + 6.25 = 18.75$$

$$9.75 + 9.75 = 19.50$$

$$\times 2 = 39.00$$

$$18.75 + 39.00 = 57.75$$

M1dep 1  
A0

Answer £ 57.75

8 A dry cleaning shop has the following offers.



Work out the total price for 2 suits and 6 dresses.

[4 marks]

$$12.50 + 6.25 = 18.75$$

$$9.75 \times 4 = 39.00$$

$$18.75 + 39.00 = 57.75$$

M1dep 1  
A1

Answer £ 57.75



## Misreads

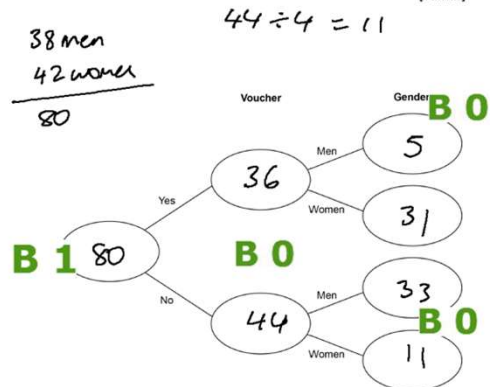
80	B1	
44 and 36	B1ft	ft their 80 – 44
27 and 9	B1ft	ft their 36 + 4 × 3 and ft their 36 + 4
15 and 29	B1ft	ft 42 – their 27 and ft 38 – their 9 Total on ft must be 44

Additional Guidance		
Voucher	Gender	
80	Yes	Men 15
		Women 29
	No	Men 27
		Women 9

Mark diagram only, do not allow misread

- 26 42 men and 38 women visit a restaurant.  
44 of these people have a voucher.  
Three times as many men as women do **not** have a voucher.
- 26 (a) Complete the frequency tree. [4 marks]



## Marks implied

“70.5 implies M2” means if you seen 70.5 then award 2 marks immediately.

For example, June 2019, 8300/2F, Question 5

- 5 Which is longer,  $\frac{3}{4}$  of a day or 1000 minutes?  
You **must** show your working.

[3 marks]

24 × 4 × 3 or 18	M1	oe
their 18 × 60 or 1080	M1dep	oe 1080 implies M2
1080 and $\frac{3}{4}$ (of a day)	A1	

## Marks implied

5 Which is longer,  $\frac{3}{4}$  of a day or 1000 minutes?  
You must show your working. [3 marks]

$\frac{3}{4} \times 24 = 18$  M 1

$18 \text{ hours} = 18 \times 60$   
 $= 1080$  Mdep 1

Answer 1000 minutes A 0

5 Which is longer,  $\frac{3}{4}$  of a day or 1000 minutes?  
You must show your working. [3 marks]

1080 M 1

Mdep 1

Answer  $\frac{3}{4}$  of a day A 1

## Marks implied

5 Which is longer,  $\frac{3}{4}$  of a day or 1000 minutes?  
You must show your working. [3 marks]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

M 1

Answer 1080 Mdep 1

## Brackets in the mark scheme

(c = ) - 9 means they don't actually need to say "c = -9", -9 alone would score the mark.

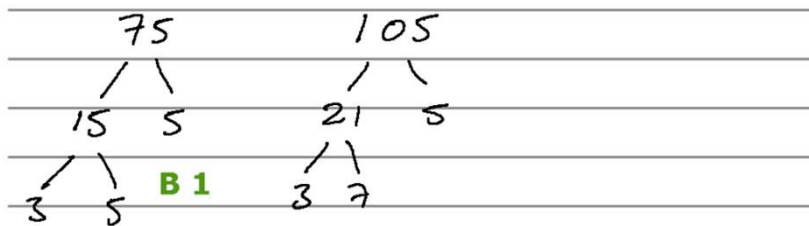
For example, Nov 2020, 8300/2F, Question 24

**24** Work out the highest common factor (HCF) of 75 and 105 **[2 marks]**

15		B1 answer 3 or answer 5 or answer 3 (x) 5 B2 or (75 =) 3 (x) 5 (x) 5 or (75 =) 3 (x) 5 <sup>2</sup> or (105 =) 3 (x) 5 (x) 7 or (1) 3 5 15 25 (75) or (1) 3 5 7 15 21 35 (105)
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## Brackets in the mark scheme

**24** Work out the highest common factor (HCF) of 75 and 105 **[2 marks]**



Answer \_\_\_\_\_

## Brackets in the mark scheme

13 Here is a formula for the amount of water needed to cook rice.

$$w = 1.5r + 0.5$$

$w$  is the number of cups of water needed

$r$  is the number of cups of rice to be cooked

13 (b) How many cups of rice can be cooked with 20 cups of water?

[3 marks]

13(b)

20 – 0.5 or 19.5 or $r = \frac{w - 0.5}{1.5}$	M1	oe
their 19.5 ÷ 1.5	M1dep	oe (20 – 0.5) ÷ 1.5 is M2
13	A1	

## Brackets in the mark scheme

13 (b) How many cups of rice can be cooked with 20 cups of water?

[3 marks]

20 – 0.5 ÷ 1.5 M0  
M0

Answer 19.6 A0

13 (b)

How many cups of rice can be cooked with 20 cups of water?

[3 marks]

20 – 0.5 ÷ 1.5 M1  
Mdep 1

Answer 13 A1

## Values in squared brackets

[4.4, 4.6] means accept 4.4, 4.5 and 4.6 (or anything in-between).

[2, 2.75] means accept between 2, up to but not including 2.75

- 23 Sam types a constant number of words per minute.  
He takes 8 minutes to type a report of 416 words.  
How long does it take him to type an essay of 1534 words?  
Give your answer in minutes and seconds.

[3 marks]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Answer \_\_\_\_\_ minutes \_\_\_\_\_ seconds

Alternative method 3 Essay words ÷ report words

$1534 \div 416$  or  $\frac{59}{16}$   
or [3.68, 3.69] or 3.7  
or  
 $(1534 - 416) \div 416$   
or [2.68, 2.69] or 2.7

M1

oe

$8 \times$  their [3.68, 3.69]  
or  
 $8 \times$  their [2.68, 2.69] + 8  
or 29.5

M1dep

oe eg  $8 \times 60 \times$  their [3.68, 3.69]  
or  
 $8 \times 60 \times$  their [2.68, 2.69] +  $8 \times 60$   
or 1770

29 minutes 30 seconds

A1

SC2 29 minutes 50 seconds  
or 29 minutes 5 seconds

## Values in squared brackets

- 23 Sam types a constant number of words per minute.  
He takes 8 minutes to type a report of 416 words.  
How long does it take him to type an essay of 1534 words?  
Give your answer in minutes and seconds.

[3 marks]

**M 1**  
 $1534 \div 416 = 4$

**Mdep 1**  
 $8 \times 4 = 32$

23

Answer 32 minutes 0 seconds **A 0**

- Sam types a constant number of words per minute.  
He takes 8 minutes to type a report of 416 words.  
How long does it take him to type an essay of 1534 words?  
Give your answer in minutes and seconds.

[3 marks]

**Mdep 1**  
 $3.7 \times 8 = 29.6$   
**M 1**

Answer 29 minutes 6 seconds **A 0**

## Values in squared brackets

23 Sam types a constant number of words per minute.  
He takes 8 minutes to type a report of 416 words.  
How long does it take him to type an essay of 1534 words?  
Give your answer in minutes and seconds. [3 marks]

**M 0**  
 $4 \times 8 = 32$

Answer 32 minutes 0 seconds **A 0**

23 Sam types a constant number of words per minute.  
He takes 8 minutes to type a report of 416 words.  
How long does it take him to type an essay of 1534 words?  
Give your answer in minutes and seconds. [3 marks]

**M 1**  
 $3.6875 \times 8$  **Mdep 1**

Answer \_\_\_\_\_ minutes \_\_\_\_\_ seconds

## Simplification or conversion of a correct answer

In probability, once a correct answer has been seen eg  $\frac{33}{120}$  ignore incorrect simplification.

	$\frac{33}{120}$ or $\frac{11}{40}$ or 0.275 or 27.5%	B1	oe fraction, decimal or percentage
<b>Additional Guidance</b>			
	Correct answer seen with an answer of 33		B0
25(a)	Ignore simplification or conversion to correct answer seen		
	eg1 $\frac{33}{120}$ seen Answer $\frac{3}{10}$		B1
	eg2 0.275 seen Answer 0.28		B1
	eg3 $\frac{11}{40}$ seen Answer 27.5		B1

## Simplification or conversion of a correct answer

- 25 Rosie makes phone calls to try to sell broadband. Today, she made 120 calls. The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

**B 1**

$$\frac{33}{120} \times 100$$

**S2**

- 25 (a) Write down the relative frequency that a call was not answered.

[1 mark]

Answer 27.5

- 25 Rosie makes phone calls to try to sell broadband. Today, she made 120 calls. The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

$$+ 120$$

- 25 (a) Write down the relative frequency that a call was not answered.

$$\frac{33}{120}$$

**B 1**

[1 mark]

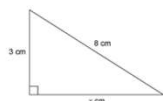
Answer  $\frac{1.1}{4}$

**S6**

## Choice

Mark the one that corresponds to the answer on their answer line.

22



Not drawn accurately

Work out the value of  $x$  as a decimal.

[3 marks]

$$8^2 - 3^2 = 64 - 9 = 55$$

**M 1**

$$\sqrt{55} = 7.416...$$

**Mdep 1**

$$8^2 + 3^2 = 73$$

$$\sqrt{73} = 8.54...$$

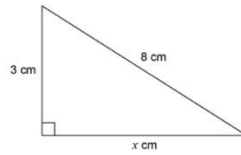
Answer 7.4

**A 1**

8 <sup>2</sup> and 3 <sup>2</sup> seen or 8 × 8 and 3 × 3 seen or 64 and 9 seen or 55	M1	M2 for $\sin^{-1}\left(\frac{3}{8}\right) = 22.(...)$ and 8 cos (their 22.(...)) or $\cos^{-1}\left(\frac{3}{8}\right) = 67.(...)$ or 68 and 8 sin (their 67.(...))
$\sqrt{8^2 - 3^2}$ or $\sqrt{64 - 9}$ or $\sqrt{55}$	M1dep	
[7.4, 7.42]	A1	

## Choice

22



Not drawn accurately

Work out the value of  $x$  as a decimal.

[3 marks]

$$8^2 - 3^2 = 64 - 9$$

$$= 55$$

$$\sqrt{55} = 7.416...$$

**M 1**  $8^2 + 3^2 = 73$

$$\sqrt{73} = 8.54...$$

Answer

**A 0**

47

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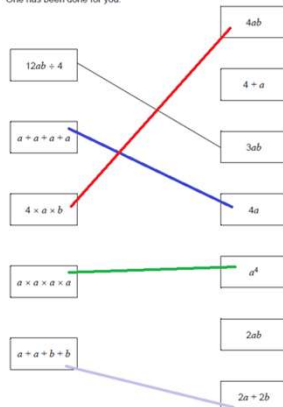
AQA

## Choice

For example, Nov 2020, 8300/2F, Question 12

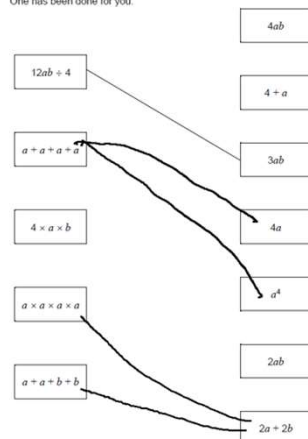
12 Match each expression on the left with one on the right.  
One has been done for you.

[4 marks]



12 Match each expression on the left with one on the right.  
One has been done for you.

[4 marks]



**B 0**

**B 0**

48

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AQA



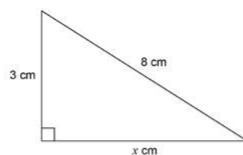
## Allow M1 even if not subsequently used

Ignore the rules of choice. If you see it, anywhere, they can score those mark(s).

“Up to M4 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts”.

## Allow method mark even if not subsequently used

22



Not drawn  
accurately

Work out the value of  $x$  as a decimal.

[3 marks]

$$\begin{aligned} 8^2 - 3^2 &= 64 - 9 \\ &= 55 \\ 8 - 3 &= 5 \end{aligned}$$

Answer 5

## Correct final answers

Always score full marks, unless it is **clear** it has come from incorrect working or unless it is a “show that” question.

6 (b) Work out  $\frac{5}{6} + \frac{3}{7}$

Give your answer as a mixed number.

[3 marks]

6b	$\frac{35}{42} (+) \frac{18}{42}$	M1	oe fractions with a correct common denominator and at least one correct numerator
	$\frac{53}{42}$	A1	oe improper fraction
	$1 \frac{11}{42}$	B1ft	oe mixed number ft for correct conversion of an improper fraction to a mixed number

## Correct final answers

6 (b) Work out  $\frac{5}{6} + \frac{3}{7} = \frac{53}{42}$  **M 0**

Give your answer as a mixed number.

[3 marks]

$\frac{53}{42} = 1 \frac{11}{42}$  **M 0**

Work out

$\frac{5}{6} + \frac{3}{7} = \frac{8}{42}$

Give your answer as a mixed number

$\frac{53}{42}$  **M 1**  
**A 1**

Answer  $1 \frac{11}{42}$  **Bft 1**

Answer  $1 \frac{11}{42}$  **Bft 1**

## Work crossed out

If they have crossed through their entire answer, mark it.

21 Billy wants to buy these tickets for a show.  
4 adult tickets at £15 each  
2 child tickets at £10 each

A 10% booking fee is added to the ticket price.  
3% is then added for paying by credit card.

Work out the total charge for these tickets when paying by credit card. [5 marks]

~~$4 \times £15 = £60$~~  **M 1**  
 ~~$+ £20$~~   
 ~~$= £80$~~   
 ~~$10\% = 8$~~  **M dep 1**

Answer £ \_\_\_\_\_

## Work crossed and replaced

Work crossed out must be ignored and not marked. Only mark the bits not crossed out.

21 Billy wants to buy these tickets for a show.  
4 adult tickets at £15 each  
2 child tickets at £10 each

A 10% booking fee is added to the ticket price.  
3% is then added for paying by credit card.

Work out the total charge for these tickets when paying by credit card. [5 marks]

~~$4 \times 15 = 60$~~   
 ~~$2 \times 10 = 20$~~   
 ~~$60 + 20 = 80$~~   
 ~~$10\% \text{ of } 80 = 8$~~   
 ~~$8 + 80 = 88$~~

$10\% \text{ of } 4 = 0.4$  **M 0**

Answer £ \_\_\_\_\_

## Poor handwriting/spelling

Apply common sense – we are on the candidates' side. Mark their intention  
For example, June 2017, 8300/2F, Question 21a.

21 (a) Eva thinks she can save water by having a shower instead of a bath. Eva's shower uses 10.8 litres per minute and lasts for 8 minutes. Eva assumes that the water in her bath is in the shape of this cuboid.



1000 cm³ = 1 litre

21 (a) Using Eva's assumption, work out how many litres of water she saves by having a shower instead of a bath. [5 marks]

*Handwritten work:*  $10.8 \times 8 = 86.4$  M1  
 $110 \times 50 \times 35 = 192500$  M1  
 $192500 \div 1000 = 192.5$  M1  
 $192.5 - 86.4 = 106.1$  M1  
 Answer: 106.1 litres A1

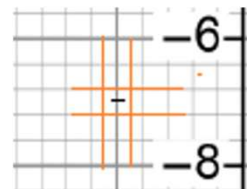
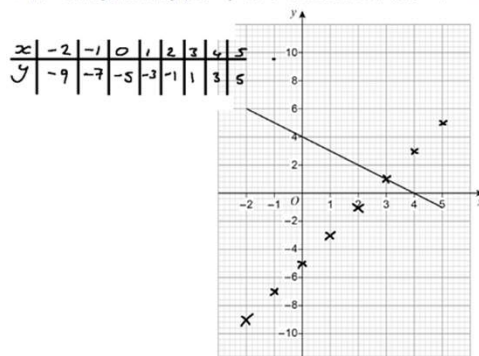
10.8 × 8 or 86.4	M1	
50 × 110 × 35 or 192 500	M1	Must use correct volume formula
their 192 500 ÷ 1000 or 192.5	M1dep	dep on 2nd M1
their 192.5 – their 86.4	M1dep	dep on M1M1M1
106.1 or 106	A1	

## Graph questions

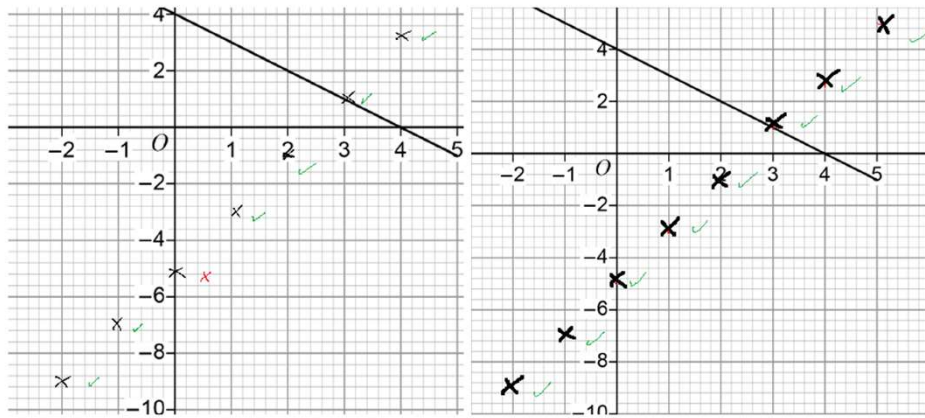
Half a square leniency allowed in the vertical, horizontal or diagonal direction.  
Measure from the outside widths of their line.

15 The graph of  $y = 4 - x$  for values of  $x$  from -2 to 5 is shown on the grid.

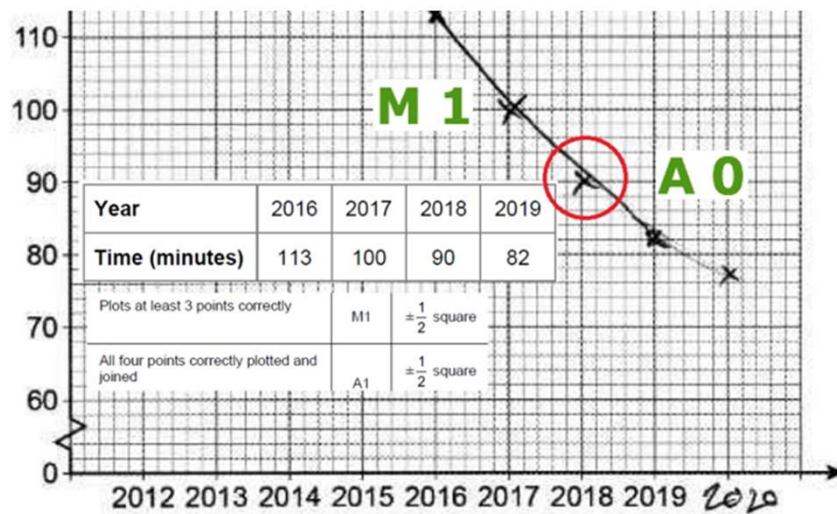
15 (a) On the grid, draw the graph of  $y = 2x - 5$  for values of  $x$  from -2 to 5 [3 marks]



## Graph questions



## Graph questions

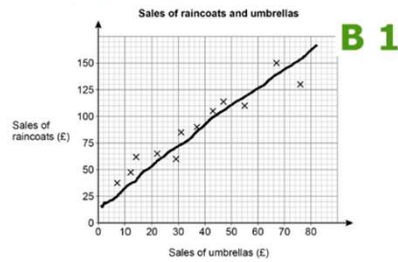


## No ruler

Apply common sense – we are on the candidates' side. Mark their intention.

18(b)	Correct straight line which passes between (10, 35) and (10, 55) and between (70, 135) and (70, 155)	B1	line must extend from 10 to 70
	Draws a vertical line from umbrella sales of £60 to meet their line or marks a point on their line of best fit corresponding to umbrella sales of £60	M1	their line / curve must be increasing may be implied by correct value for their line / curve
	Correct value for their line	A1ft	ft their increasing line / curve allow any reading within one vertical square eg if their vertical line crosses their line of best fit in the first square above 125, allow [125, 130]

- 18 A shop sells raincoats and umbrellas.  
The scatter graph shows the monthly sales for 12 months.



- 18 (b) The manager expects the sales of umbrellas next month to be £60 [3 marks]

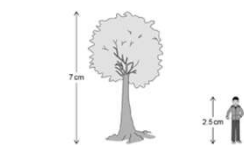
Draw a line of best fit to estimate the sales of raincoats next month.

Answer £ 125 **M 1 Aft 1**

## Questions involving metric units

If a question has “m” printed on the answer line to suggest their answer should be in metres. They are allowed to cross this out.

- 15 The scale drawing shows a tree and a student.



Work out the actual height of the student. [3 marks]

$7\text{cm} = 4.2\text{m}$   
 $1\text{cm} = 60$  **M 1**  
 $60 \div 60 = 30$  **Mdep 1**

Answer 150 ~~X~~ cm **A 1**

- 15

$4.2 \times 100 \div 7$ or 60 or $7 \div (4.2 \times 100)$ or 0.0166... or 0.0167 or $2.5 \div 7$ or 0.357... or 0.36 or $7 \div 2.5$ or 2.8	M1	oe eg $420 \div 7$ or $7 \div 420$ implied by $1 \rightarrow 60$ or $0.5 \rightarrow 30$
$2.5 \times 420 \div 7$ or 150	M1dep	oe eg $2.5 \div (7 \div 420)$ or $2.5 \div 0.0167$ or $420 \div (7 \div 2.5)$ or $420 \div 2.8$ or full build-up eg $60 \div 60 = 30$ or $30 \times 5$ or $420 \div 2 = 60$
1.5	A1	oe fraction or decimal SC2 answer with digits 15
150 is M2A0 but Answer 150 cm with m crossed out would be M2A1		

## Seen

If you see it, anywhere, then award the mark.

For example, June 2018, 8300/3F, Question 28

**28** The cost of a ticket increases by 10% to £19.25

Work out the original cost.

[3 marks]

28	1.1 seen or $110\% = 19.25$ seen or $19.25 \div 1.1$	M1	oe eg $10\% = 1.75$ $1\% = 0.175$
	$19.25 \div 1.1$ or $0.175 \times 100$ or 17.5	M1dep	oe
	17.50	A1	correct money notation
	Additional Guidance		
	Condone £17.50p		M1M1A1
	Answer £17.5		M1M1A0

## Seen

**28** The cost of a ticket increases by 10% to £19.25

Work out the original cost.

[3 marks]

**M 1**

19.25 ÷ 1.1 = 21.175

Answer £ 21.18 28

The cost of a ticket increases by 10% to £19.25

Work out the original cost.

[3 marks]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

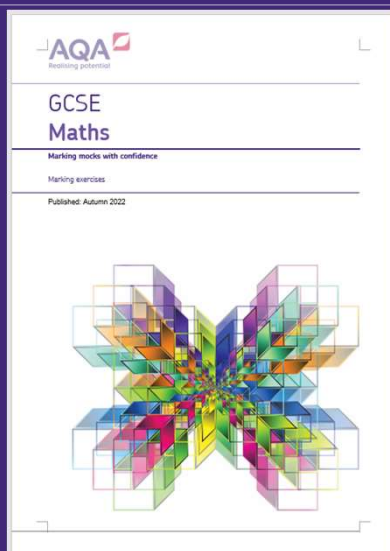
\_\_\_\_\_

Answer £ 1.1 **M 1**

## Break



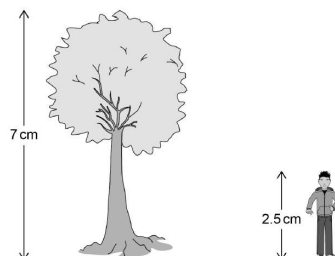
## Practice marking





## June 2022, 8300/2F, Question 15

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

Answer \_\_\_\_\_ m

## Mark Scheme

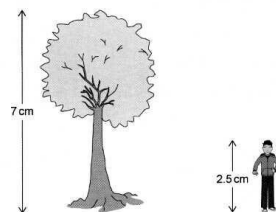
Q	Answer	Mark	Comments
15	<b>Alternative method 1</b> Using the given values		
	$4.2 \div 7$ or 0.6 or $7 \div 4.2$ or 1.66... or 1.67 or $2.5 \div 7$ or 0.357... or 0.36 or $7 \div 2.5$ or 2.8	M1	implied by $1 \rightarrow 0.6$ or $0.5 \rightarrow 0.3$
	$2.5 \times 4.2 \div 7$	M1dep	oe eg $2.5 \div (7 \div 4.2)$ or $2.5 \times 1.67$ or $4.2 \div (7 \div 2.5)$ or $4.2 \div 2.8$ or full build-up eg $0.6 + 0.6 + 0.3$ or $0.3 \times 5$ or $4.2 \div 2 = 0.6$
	1.5	A1	oe fraction or decimal SC2 answer with digits 15
	<b>Alternative method 2</b> Working consistently in centimetres		
	$4.2 \times 100 \div 7$ or 60 or $7 \div (4.2 \times 100)$ or 0.0166... or 0.0167 or $2.5 \div 7$ or 0.357... or 0.36 or $7 \div 2.5$ or 2.8	M1	oe eg $420 \div 7$ or $7 \div 420$ implied by $1 \rightarrow 60$ or $0.5 \rightarrow 30$
	$2.5 \times 420 \div 7$ or 150	M1dep	oe eg $2.5 \div (7 \div 420)$ or $2.5 \times 0.0167$ or $420 \div (7 \div 2.5)$ or $420 \div 2.8$ or full build-up eg $60 + 60 + 30$ or $30 \times 5$ or $420 \div 2 = 60$
	1.5	A1	oe fraction or decimal SC2 answer with digits 15

## Additional Guidance

15 cont	Additional Guidance	
	Up to M1 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts	
	Answer 1.5 with no working	M2A1
	150 is M2A0 but Answer 150 cm with m crossed out would be M2A1	
	4.2 : 1.5 or 420 : 150	M2
	For consistent working in millimetres or metres apply the principles of Alt 2	
	Incorrect or inconsistent change of units must be recovered for M2A0 or M2A1, otherwise score 0 or SC2	
	eg1 $42 \div 7 = 6$ , $6 \times 2.5 = 15$ , Answer 1.5 (units recovered)	M2A1
	eg2 $4200 \div 7 = 800$ , $800 \times 2.5 = 2000$ , Answer 2 (arithmetic slip but method shown and units recovered)	M2A0
	eg3 $42 \div 7 = 6$ , $6 \times 2.5 = 15$ , Answer 15 (units never recovered)	SC2
	<b>NB</b> Correct values from incorrect methods	
	eg1 $7 - 4.2 = 2.8$ with no other creditworthy work	M0M0A0
	eg2 $2.5 \div 4.2 = 0.6$ (1 dp) with no other creditworthy work	M0M0A0
	If rounded or truncated values are used, the final answer must be exactly 1.5	
	eg1 $2.5 \div 1.66$ Answer 1.5 (may have kept full value on calculator)	M2A1
	eg2 $2.5 \div 1.66 = 1.506$ Answer 1.5 (comes from further rounding)	M2A0

## S1

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

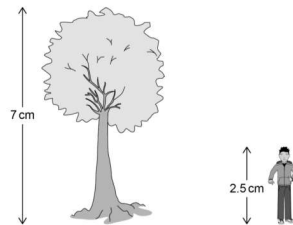
Work out the actual height of the student.

[3 marks]

$7 = 4.2$       $4.2 \div 7 = 0.6$   
 $3.5 = 2.1$       $1 = 0.6$   
 $2.1 - 0.6 = 1.5$   
 Answer 1.5 m

## S2

- 15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

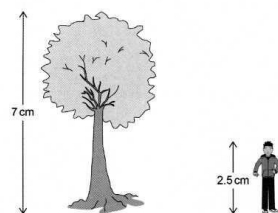
[3 marks]

$$\begin{array}{l} 4.2 \rightarrow 7 \\ 2.1 \rightarrow 3.5 \\ 0.6 \rightarrow 1 \\ 1 \times 2.5 \rightarrow 0.6 \times 2.5 = 1.5 \end{array} \quad \begin{array}{l} 7 - 2.5 = 4.2 \\ = 1.07 \end{array}$$

Answer 1.07 m

## S3

- 15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

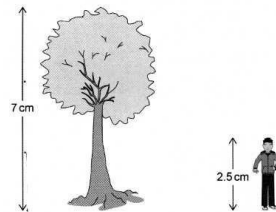
[3 marks]

$$\begin{array}{r} 4.2 \\ \times 6 \\ \hline 25.2 \end{array}$$

Answer 1.5 m

S4

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

$$7 \div 4.2 = 1.6$$

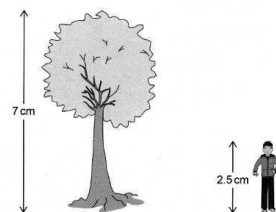
$$1.6 \times 2.5 = 4$$

Answer 4 m

Do not write  
outside the  
box

S5

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

$$\text{half of } 7\text{ cm} = 4.2$$

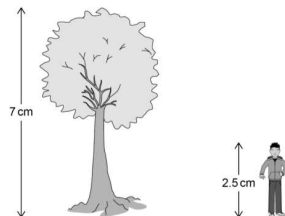
$$\text{half of } 2.5 = 1.5$$

Answer 1.5 m

Do not write  
outside the  
box

## S6

- 15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

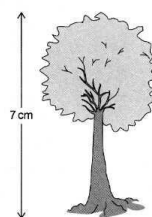
$$4.2 \div 7 = 0.6$$

$$0.6 \times 2.5$$

Answer 1.5 m

## S7

- 15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

$$4.2 \text{ m} = 7 \text{ cm}$$

$$7 \div 4.2 = 1.6$$

$$2.5 \div 1.6 = 1.5625$$

$$1.5625 \times 100 = 156.25$$

$$156.25 \div 100 = 1.5625$$

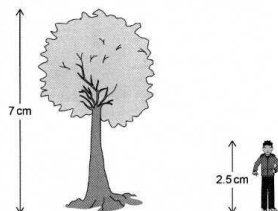
$$1.5625 \times 100 = 156.25$$

$$156.25 \div 100 = 1.5625$$

Answer 1.56 m

S8

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

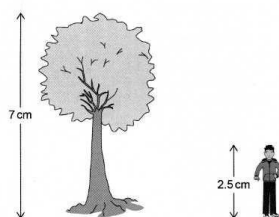
$7 \text{ cm} - 4.2 \text{ cm} = 2.8 \text{ cm}$   
 Tree is 2.8 cm less in actual height  
~~2.5 - 2.8 = -0.3~~  
~~2.5 - 2.8 = -0.3~~  
 $2.5 + 2.8 = 5.3 \text{ cm}$

Answer 5.3 cm m

Do not write  
outside the  
box

S9

15 The scale drawing shows a tree and a student.



The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

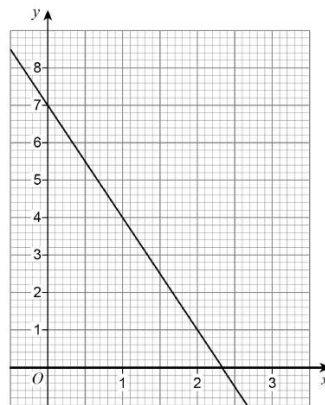
$7 \overline{) 420}$   
 $60 + 60 + 30 = 150$

Answer 150 m

Do not write  
outside the  
box

## June 2022, 8300/1F, Question 16

16 Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then

work out an approximate solution to  $7 - 3x = 2x + 1$

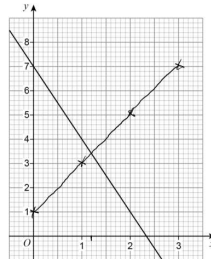
[3 marks]

## Mark scheme & additional guidance

Q	Answer	Mark	Comments
16	At least two points from (0, 1) (1, 3) (2, 5) and (3, 7)	M1	may be seen in a table of values or embedded in calculations may be implied by correct line $\pm \frac{1}{2}$ square tolerance
	Correct straight line between (1, 3) and (2, 5)	A1	$\pm \frac{1}{2}$ square tolerance
	[1.15, 1.25] from using the graph or 1.2	B1ft	oe ft x-coordinate of any line drawn that intersects the given line $\pm \frac{1}{2}$ square tolerance
	<b>Additional Guidance</b>		
	Ignore further work after B1 scored		
	1.2 with M0 scored		M0A0B1
	1.2 with two correct points seen but no or incorrect line		M1A0B1
	For the A1, ignore incorrect lines unless used to read off for intersection and then only allow for the B1ft		
	Answer given as coordinates eg (1.2, 3.4)		B0

S1

16 Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then  
work out an approximate solution to  $7 - 3x = 2x + 1$

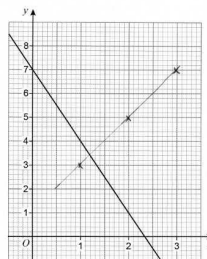
[3 marks]

Answer

$x = 1.2$

S2

16 Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then

work out an approximate solution to  $7 - 3x = 2x + 1$

[3 marks]

$$\begin{array}{l} y = 2 \times 1 + 1 = 3 \\ y = 2 \times 2 + 1 = 5 \\ y = 2 \times 3 + 1 = 7 \end{array} \quad \begin{array}{l} 7 - 3x = 2x + 1 \\ 7 - 3x + 3x = 2x + 1 + 3x \\ 7 = 5x + 1 \\ 7 - 1 = 5x + 1 - 1 \\ 6 = 5x \\ 6 \div 5 = x \\ 1.2 = x \end{array}$$

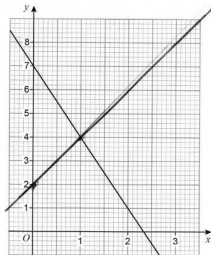
Answer  $x = 1.2$



S3

16

Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then  
work out an approximate solution to  $7 - 3x = 2x + 1$

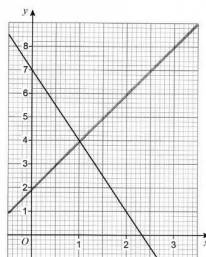
[3 marks]

Answer  $y = 4$   $x = 1$

S4

16

Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then  
work out an approximate solution to  $7 - 3x = 2x + 1$

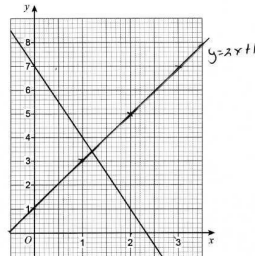
[3 marks]

$$\begin{array}{r} 7 - 3x = 2x + 1 \\ 7 - 3x - 2x = 2x + 1 - 2x \\ 7 - 5x = 1 \\ 7 - 1 = 5x \\ 6 = 5x \\ \frac{6}{5} = x \end{array}$$

Answer  $\frac{6}{5} = x$

S5

16 Here is the graph of  $y = 7 - 3x$



Draw the graph of  $y = 2x + 1$  on the grid  
and then  
work out an approximate solution to  $7 - 3x = 2x + 1$

[3 marks]

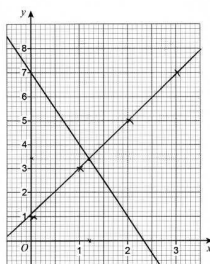
$y = 2x + 1$   
0, 1, 2, 3  
1 3 5 7

$7 - 3x = 2x + 1$   
13  
 $7 = 5x + 1$   
 $6 = 5x$   
 $1.2 = x$

Answer 1.25

S6

16 Here is the graph of  $y = 7 - 3x$



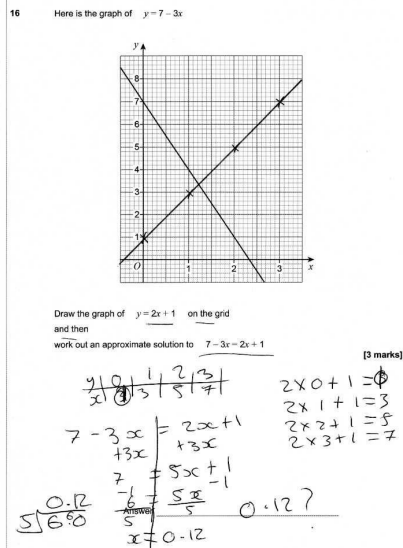
Draw the graph of  $y = 2x + 1$  on the grid  
and then  
work out an approximate solution to  $7 - 3x = 2x + 1$

[3 marks]

$y = 2x + 1$	0	1	2	3
$y = 7 - 3x$	1	3	5	7

Answer (1.2, 2.2)

S7



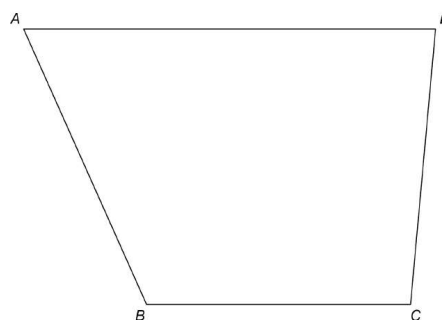
85

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AQA

## June 2022 8300/1F Question 24 & 8300/1H Question 10

- 24 Use a ruler and compasses in this question.  
 $ABCD$  represents a garden.



A tree is to be planted in the garden.  
 The tree will be in the region that is closer to  $AB$  than to  $BC$ .  
 Label the region,  $R$ , where the tree could be planted.  
 Show all your construction lines.

[3 marks]

86

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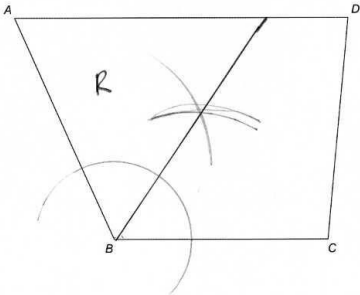
AQA

Mark scheme and additional guidance

Q	Answer	Mark	Comments
24	Alternative method 1		
	Pair of arcs, equal radii ( $\pm 2\text{ mm}$ ), centre $B$ , intersecting $AB$ and $BC$	M1	oe eg single arc, centre $B$ , intersecting $AB$ and $BC$ or single arc, centre $B$ , radius $BC$ ( $\pm 2\text{ mm}$ ), intersecting $AB$
	Pair of intersecting arcs, equal radii ( $\pm 2\text{ mm}$ ), centres the intersections on $AB$ and $BC$ and angle bisector drawn from $B$ at least to the intersection of their arcs	A1	dashed line or condone solid line
	Correct region $R$ shown as the area between $AB$ and a straight line from $B$ to within $2\text{ mm}$ of $AD$	B1	$R$ may be labelled or shaded arcs not required for this mark only SC1 angle bisector for a different angle correctly constructed with arcs
	Alternative method 2		
	Concentric arcs from $B$ , each intersecting $AB$ and $BC$	M1	intersections with $AB$ and $BC$ must be seen, but full arcs are not necessary
	Two lines from the $AB$ intersection of one arc to the $BC$ intersection of the other arc and angle bisector drawn from $B$ at least to the intersection of their lines	A1	dashed line or condone solid line
	Correct region $R$ shown as the area between $AB$ and a straight line from $B$ to within $2\text{ mm}$ of $AD$	B1	$R$ may be labelled or shaded arcs not required for this mark only SC1 angle bisector for a different angle correctly constructed with arcs
	Additional Guidance		
	Mark any correct construction, ignoring incorrect attempts		
	Unless shaded incorrectly, ignore construction arcs or other lines in the region labelled		
	Bisector drawn with no construction arcs, but region correctly identified		MOAOB1

S1

24 Use a ruler and compasses in this question.  
 $ABCD$  represents a garden.



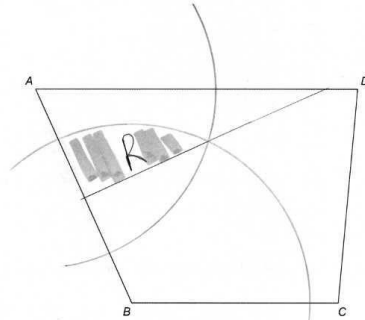
A tree is to be planted in the garden.  
The tree will be in the region that is closer to  $AB$  than to  $BC$ .  
Label the region,  $R$ , where the tree could be planted.  
Show all your construction lines.

[3 marks]

S2

24

Use a ruler and compasses in this question.  
 $ABCD$  represents a garden.



A tree is to be planted in the garden.  
 The tree will be in the region that is closer to  $AB$  than to  $BC$ .  
 Label the region,  $R$ , where the tree could be planted.  
 Show all your construction lines.

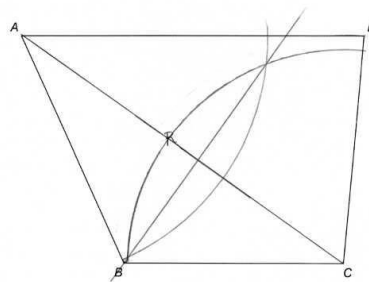
bisector open to 6cm.

[3 marks]

S3

24

Use a ruler and compasses in this question.  
 $ABCD$  represents a garden.



A tree is to be planted in the garden.  
 The tree will be in the region that is closer to  $AB$  than to  $BC$ .  
 Label the region,  $R$ , where the tree could be planted.  
 Show all your construction lines.

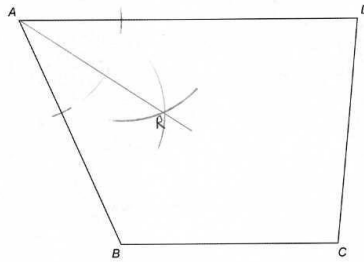
[3 marks]

S4

24

Use a ruler and compasses in this question.

$ABCD$  represents a garden.



A tree is to be planted in the garden.

The tree will be in the region that is closer to  $AB$  than to  $BC$ .

Label the region,  $R$ , where the tree could be planted.

Show all your construction lines.

[3 marks]

91

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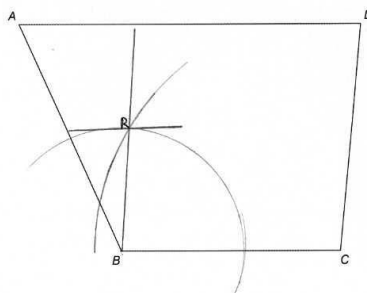
AQA

S5

24

Use a ruler and compasses in this question.

$ABCD$  represents a garden.



A tree is to be planted in the garden.

The tree will be in the region that is closer to  $AB$  than to  $BC$ .

Label the region,  $R$ , where the tree could be planted.

Show all your construction lines.

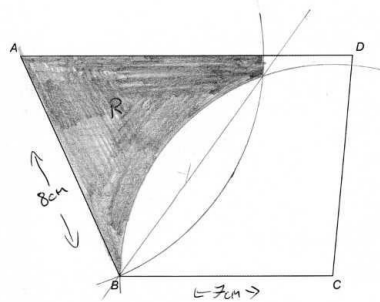
[3 marks]

92

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AQA

- 24 Use a ruler and compasses in this question.  
 $ABCD$  represents a garden.



A tree is to be planted in the garden.  
 The tree will be in the region that is closer to AB than to BC.  
 Label the region, R, where the tree could be planted.  
 Show all your construction lines.

[3 marks]

## June 2022 8300/2F Question 25a & 8300/2H Question 9a

- 25 Rosie makes phone calls to try to sell broadband.  
 Today, she made 120 calls.  
 The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

## Mark scheme & additional guidance

Q	Answer	Mark	Comments
	$\frac{33}{120}$ or $\frac{11}{40}$ or 0.275 or 27.5%	B1	oe fraction, decimal or percentage
<b>Additional Guidance</b>			
	Correct answer seen with an answer of 33		B0
	Ignore simplification or conversion if correct answer seen		
	eg1 $\frac{33}{120}$ seen Answer $\frac{3}{10}$		B1
	eg2 0.275 seen Answer 0.28		B1
	eg3 $\frac{11}{40}$ seen Answer 27.5		B1
	Ignore words if correct answer seen		
	eg1 $\frac{33}{120}$ seen Answer 11 out of 40		B1
	eg2 $\frac{33}{120}$ , unlikely		B1
25(a)	Answer given as ratio (even if correct answer also seen) eg 33 : 120		B0
	Answer only in words eg 33 out of 120		B0
	Only 27.5 (without %)		B0
	Only 27% or 28%		B0
	Only 0.27 or 0.28		B0
	Only $\frac{1.1}{4}$		B0

## S1

- 25** Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a)** Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer  $\frac{33}{120}$



## S2

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

$$\frac{33}{120} \times 100$$

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer 27.5

## S3

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

$$\frac{33}{120}$$

120 is total

27.5

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer 28%

0.275

## S4

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer  $\frac{33}{120} = \frac{11}{40}$

## S5

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer 27.5

S6

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer

~~33/120~~  $\frac{33}{120}$

S7

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer

$\frac{33}{120}$   
 $\frac{1.1}{4}$

## S8

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

Answer 0.28

## June 2022 8300/2F Question 25b & 8300/2H Question 9b

- 25 Rosie makes phone calls to try to sell broadband.  
Today, she made 120 calls.  
The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

- 25 (b) During the **rest of the week**, Rosie will make 500 calls.

Using the results in the table, how many sales does she expect to make during the **rest of the week**?

[2 marks]

## Mark scheme & additional guidance

Q	Answer	Mark	Comments
25(b)	$\frac{6}{120} \times 500$ or $[4.16, 4.17] \times 6$ or $[24.96, 25.02]$ or $4.2 \times 6$ or $25.2$ or $25 : 500$ or $\frac{25}{500}$	M1	oe eg $0.05 \times 500$ or $500 \div 20$
	25	A1	
	Additional Guidance		
	Working and value may be seen by table		
	24 + 1, Answer 25		M1A1
	480 = 24, Answer 25		M1A1
	Embedded but not selected as answer eg $137.5 + 337.5 + 25 = 500$		M1A0
	Working for Not answered or Answered but sale not made is <b>not</b> choice eg ignore 137.5 and 337.5 seen		
	25 followed by answer 19		M1A0
	If rounded or truncated values are used, the final answer must be exactly 25		
	eg1 $500 \div 120 = 4.16, 4.16 \times 6$ Answer 25 (may have kept full value on calculator)		M1 A1
	eg2 $500 \div 120 = 4.16, 4.16 \times 6 = 24.96$ Answer 25 (comes from further rounding)		M1 A0

## S1

25 (b) During the **rest of the week**, Rosie will make 500 calls.

Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

$120 \div 6 = 20$

$500 \div 20 = 25$

Answer 25

S2

25 (b) During the **rest of the week**, Rosie will make 500 calls.

Using the results in the table, how many sales does she expect to make during the **rest of the week**?

[2 marks]

$$500 \div 120 = 4.1$$

$$4.1 \times 6 = 24.6$$

Answer \_\_\_\_\_

S3

25 (b) During the **rest of the week**, Rosie will make 500 calls.

Using the results in the table, how many sales does she expect to make during the **rest of the week**?

[2 marks]

$$120 \times 4.2 = 504$$

$$6 \times 4.2 = 25.2$$

Answer 25

S4

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

$120 \div 120 = 1$  sales  
 $120 \times 4 = 480$  sales

Answer \_\_\_\_\_

S5

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

Answer 25

S6

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

$500 \div 120 = 4.1\bar{6}$   
 $\text{not answered} = 39 \times 4.1\bar{6} / 81 \times 4.1\bar{6} \times 4.1$   
 $= 135 / 332 / 24$

Answer 24 more

S7

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

$500 \div 120 = 4.1\bar{6}$   $6 \times 4 = 24$

Answer Expected to make 24 sales



S8

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

120 calls = 6 sales    480 calls = 24 sales  
380 calls left    20 calls = 1 sale  
500 calls = 25 sales  
25 - 6 = 19

Answer 19

S9

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

120 ÷ 6 = 20    120 × 4 = 480  
6 × 24    500  
480 = 24 sales  
25 sales

Answer 25 sales

S10

25 (b) During the **rest of the week**, Rosie will make 500 calls.  
Using the results in the table, how many sales does she expect to make during the **rest of the week**? [2 marks]

$$\begin{array}{r} 6 \phantom{00} 13 \\ 120 \phantom{00} 240 \end{array}$$

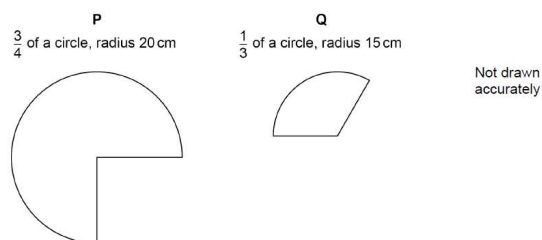
$$500 \div 120 = 4.16$$

$$4.16 \times 6 = 24.96$$

Answer 25

## June 2022 8300/1F Question 25 & 8300/1H Question 11

25 Here are two shapes, P and Q.



How many times bigger is the area of P than the area of Q?  
You **must** show your working.

[4 marks]

## Mark scheme & additional guidance

Q	Answer	Mark	Comments
25	$20^2 (\times \pi)$ or $400 (\times \pi)$ or $15^2 (\times \pi)$ or $225 (\times \pi)$	M1	oe
	$\frac{3}{4} \times 20^2 (\times \pi)$ or $300 (\times \pi)$ or $\frac{1}{3} \times 15^2 (\times \pi)$ or $75 (\times \pi)$	M1dep	oe
	$\frac{3}{4} \times 20^2 (\times \pi)$ or $300 (\times \pi)$ and $\frac{1}{3} \times 15^2 (\times \pi)$ or $75 (\times \pi)$	M1dep	
	$300 (\times \pi)$ and $75 (\times \pi)$ and 4	A1	Accept $P = 4Q$ for 4 SC2 $40 (\times \pi)$ and $30 (\times \pi)$ and $30 (\times \pi)$ and $10 (\times \pi)$ and answer 3
	<b>Additional Guidance</b>		
	Answer 4 with no working		M0A0
	Condone inconsistent use of $\pi$ eg $300\pi$ and 75 and 4		M3A1
	Condone, for example, $\pi 400$ for $400\pi$		
	Allow use of a numerical value for $\pi$ for method marks and for the A mark with answer 4		
	Ignore units throughout		

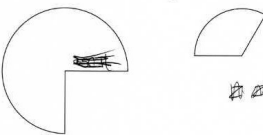
## S1

25 Here are two shapes, P and Q.

P  
 $\frac{3}{4}$  of a circle, radius 20 cm

Q  
 $\frac{1}{3}$  of a circle, radius 15 cm

Not drawn accurately



How many times bigger is the area of P than the area of Q?  
You **must** show your working. [4 marks]

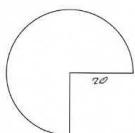
15 30 60 90 120 150 180 210 225  
 $225 \div 3 = 75\pi$   
~~300~~ 300 is the  
 radius  
 Answer ~~300~~ 4

## S2

25

Here are two shapes, P and Q.

P  
 $\frac{3}{4}$  of a circle, radius 20 cm



Q  
 $\frac{1}{3}$  of a circle, radius 15 cm



Not drawn accurately

How many times bigger is the area of P than the area of Q?

You **must** show your working.

[4 marks]

$$\pi \times 20^2 = 400\pi$$

$$\pi \times 15^2 = 225\pi$$

$$\frac{400\pi}{225\pi} = \frac{16}{9}$$

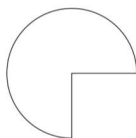
Answer  $\frac{16}{9}$

## S3

25

Here are two shapes, P and Q.

P  
 $\frac{3}{4}$  of a circle, radius 20 cm



Q  
 $\frac{1}{3}$  of a circle, radius 15 cm



Not drawn accurately

How many times bigger is the area of P than the area of Q?

You **must** show your working.

[4 marks]

$$\pi \times 20^2 = 400\pi \div 4 \times 3 = 300\pi$$

$$\pi \times 15^2 = 225\pi \div 3 = 75\pi$$

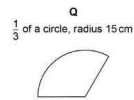
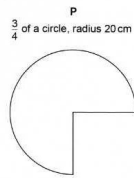
$$\frac{300\pi}{75\pi} = 4$$

Answer 4

## S4

25

Here are two shapes, P and Q.



Not drawn accurately

How many times bigger is the area of P than the area of Q?  
You must show your working.

[4 marks]

$$P = \frac{3}{4} \times 15 \text{ cm}$$

$$15 \times 5 = 10$$

$$Q = \frac{1}{3} \times 15 = 5 \text{ cm}$$

$$\frac{3}{4} \times 20 = 15$$

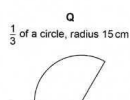
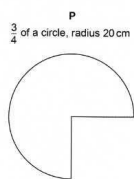
$$\frac{1}{3} \times 15 = 5$$

Answer ~~10~~ 3 times bigger

## S5

25

Here are two shapes, P and Q.



Not drawn accurately

How many times bigger is the area of P than the area of Q?  
You must show your working.

[4 marks]

$$\pi \times 20^2 = 400\pi$$

$$\frac{3}{4} = 100 \times 3 = 300$$

$$\frac{1}{3} \times 225 = 75 \quad \pi \times 15^2 = 225\pi \quad \frac{1}{3} \times 125 = 41.67$$

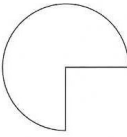
$$400 - 125 = 275 \quad 300 - 75 = 225 \quad 3 \sqrt{225}$$

Answer 225


## S6

25 Here are two shapes, P and Q.

**P**  
 $\frac{3}{4}$  of a circle, radius 20 cm



**Q**  
 $\frac{1}{3}$  of a circle, radius 15 cm



Not drawn accurately

How many times bigger is the area of P than the area of Q?  
 You must show your working. [4 marks]

arc of  $360^\circ$

$25\% \text{ of } 360 =$

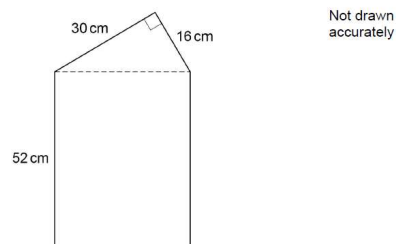
$$\begin{array}{r} 160 \\ + 140 \\ \hline 300 \end{array}$$

$$\begin{array}{r} 140 \\ + 140 \\ \hline 280 \end{array}$$

Answer 2.25

## June 2022 8300/2F Question 27 & 8300/2H Question 11

- 27 A shape is made by joining a right-angled triangle to a rectangle.



Work out the area of the shape.

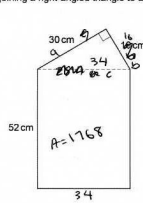
[5 marks]

## Mark scheme & additional guidance

Q	Answer	Mark	Comments
27	$16^2$ or 256 and $30^2$ or 900	M1	oe implied by 1156
	$\sqrt{16^2 + 30^2}$ or $\sqrt{256 + 900}$ or $\sqrt{1156}$ or 34	M1dep	oe eg $\sqrt{16^2 + 30^2} = 2 \times 16 \times 30 \times \cos 90$
	$52 \times \text{their } 34$ or 1768	M1dep	oe if M1M0 their 34 can be any value other than 16, 30 or 52 dep on 1st M
	$0.5 \times 30 \times 16$ or 240	M1	oe eg $0.5 \times 30 \times 16 \times \sin 90$
	2008	A1	SC3 2248
<b>Additional Guidance</b>			
27 cont	Up to M4 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts		
	The 4th mark in Alts 1 and 2 is not dependent on any other marks		
	34 or 1768 or 240 may be on the diagram		
	SC3 is for using $30 \times 16$ for the area of the triangle		
	Ignore units		

## S1

27 A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape. [5 marks]

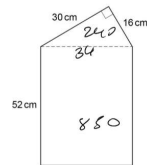
~~$16^2 + 30^2 = 1156$~~   
 ~~$\sqrt{1156} = 34$~~

$52 \times 34 = 1768$  (rectangle)  
 $\frac{16 \times 30}{2} = 240$  (triangle)  
 $1768 + 240 = 2008$

Answer 2008 cm<sup>2</sup>

## S2

- 27 A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

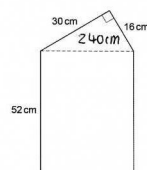
Work out the area of the shape.

[5 marks]

$$\begin{aligned}
 30^2 + 16^2 &= 900 + 256 \\
 &= 1156 = 34 \\
 34 \times 25 &= 850 \\
 A &= 30 \times 16 \\
 &= 480 \div 2 \\
 &= 240 \\
 850 + 240 &= 1090 \\
 \text{Answer } &1090 \text{ cm}^2
 \end{aligned}$$

## S3

- 27 A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape.

[5 marks]

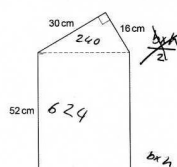
$$\begin{aligned}
 \text{Triangle} &= \frac{30 \times 16}{2} = 240 \text{ cm} \\
 240 \times 2 &= 480 \\
 \text{rectangle} &52 \times 30 = 1560 \text{ cm} \quad 240 + 1560 = 1800 \\
 \text{Answer } &1800 \text{ cm}^2
 \end{aligned}$$



S4

27

A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape.

[5 marks]

$$16 \times 30 = 480 \div 2 = 240$$

$$a^2 + b^2 = c^2$$

$$30^2 - 16^2 = 1156$$

$$52 \times 12 = 624$$

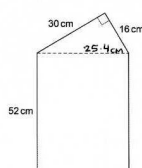
$$624 + 240 = 864 \text{ cm}^2$$

Answer 864 cm<sup>2</sup>

S5

27

A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape.

[5 marks]

$$\text{Area of a triangle} = B \times h \div 2$$

$$30^2 - 16^2 = 644$$

$$\sqrt{644} = 25.4$$

$$25.4 \times 16 \div 2 = 203.2$$

$$52 \times 25.4 = 1320.8$$

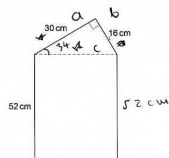
$$1320.8 \div 2 = 660.4$$

$$660.4 + 203.2 = 863.6$$

Answer 863.6 cm<sup>2</sup>

## S6

27 A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape.

[5 marks]

Area of triangle =  $\frac{1}{2} b \times h$   
 area of rectangle =  $B \times h$

~~501156 = 1156~~  $a^2 + b^2 = c^2$   
 $30^2 + 16^2 = 1156$

~~100 + 256 = 356~~  $\sqrt{1156} = 34$

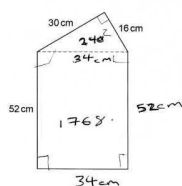
~~100 + 256 = 356~~ (Pythagoras)

$52 \times 34 = 1768 \text{ cm}^2$   $1768 + 240 = 2008$

area of rectangle =  $1768 \text{ cm}^2$   
 area of triangle =  $240 \text{ cm}^2$   
 Answer  $2008 \text{ cm}^2$

## S7

27 A shape is made by joining a right-angled triangle to a rectangle.



Not drawn accurately

Work out the area of the shape.

[5 marks]

area  $a^2 + b^2 = c^2$

$16^2 + 30^2 = 34^2$

Answer \_\_\_\_\_  $\text{cm}^2$

## June 2022 8300/2F Question 28 & 8300/2H Question 5

28 Solve  $5(2x - 1) = 6x + 9$

[3 marks]

Q	Answer	Mark	Comments
28	$10x - 5$	M1	may be seen in a grid
	their $10x - 6x = 9 + \text{their } 5$ or $4x = 14$ or $14 \div 4$ or $7 \div 2$	M1	oe eg their $-5 - 9 = 6x - \text{their } 10x$ or $4x - 14 = 0$ collecting two terms in $x$ and two constant terms correctly
	$\frac{14}{4}$ or $3\frac{2}{4}$ or $\frac{7}{2}$ or $3\frac{1}{2}$ or 3.5	A1ft	oe ft M1M0 or M0M1 with exactly one error

## Additional guidance

Additional Guidance	
Ignore simplification or conversion if correct answer seen	
Correct answer from trial and improvement	M1M1A1
Correct equation with terms collected or division with no or incorrect answer	M1M1A0
Embedded 3.5 with no or incorrect answer	M1M1A0
$10x - 5 = 6x + 9$	M1
$10x - 6x = 9 - 5$	M0
$x = 1$ (exactly one error in line 2)	A1ft
$7x - 5 = 6x + 9$	M0
$7x - 6x = 9 + 5$	M1
$x = 14$ (exactly one error in line 1)	A1ft
$10x - 5 = 6x + 9$	M1
$10x + 6x = 9 - 5$	M0
$x = \frac{4}{16}$ (two errors in line 2)	A0ft
$10x - 1 = 6x + 9$	M0
$10x - 6x = 9 + 1$	M1
$x = 3$ (exactly one error in line 1 but answer does not fit)	A0ft
$7x - 6 = 6x + 9$	M0
$7x - 6x = 9 + 6$	M1
$x = 15$ (two errors in line 1)	A0ft
$10x + 4 = 6x + 9$	M0
$10x - 6x = 9 + 4$	M0
$x = 3.25$ (neither M mark scored)	A0ft
$10x - 5 = 30x + 45$	M1M0A0ft
Any ft answer must be rounded or truncated to 1 dp or better	
The last two marks can be implied without the collection of terms seen eg $10x - 1 = 6x + 9$ and $x = 2.5$	M0M1A1ft
Collecting terms before the bracket has been expanded	M0M0A0ft

S1

28 Solve  $5(2x - 1) = 6x + 9$  [3 marks]

Do not write outside the box

$$\begin{array}{r}
 10x - 5 = 6x + 9 \\
 -6x \quad -6 \\
 \hline
 4x - 5 = 9 \\
 +5 \quad +5 \\
 \hline
 4x = 14 \quad 14 / 4 = 3.5 \\
 \hline
 x = 3.5
 \end{array}$$

S2

28 Solve  $5(2x - 1) = 6x + 9$  [3 marks]

$$\begin{array}{r}
 5(2x - 1) = 6x + 9 \\
 10x - 5 = 6x + 9 \\
 4x = 14 \\
 x = 3.5
 \end{array}$$

$x =$  \_\_\_\_\_

S3

28 Solve  $5(2x-1)=6x+9$  [3 marks]

~~$10x-5=6x+9$   
 $-9x$   
 $1x-5=$~~

$10x-5=6x+9$   
 $-6x$   
 $4x-5=+9$   
 $-5$

$4x=4$   
 $x=1$

$x = 1$

Do not write outside the box

S4

28 Solve  $5(2x-1)=6x+9$  [3 marks]

$10x-1=6x+9$   
 $4x-1=9$   
 $4x=10$   
 $x=2.5$

$-6x$   
 $+1$   
 $-4$

$x = 2.5$

Do not write outside the box

S5

28 Solve  $5(2x - 1) = 6x + 9$  [3 marks]

$$5(2x - 1) = 6x + 9$$

$$10x - 5 = 6x + 9$$

$$10x - 1 = 9$$

$$10x = 10$$

$$x = 1$$

$x = 1$

Do not write outside the box

S6

28 Solve  $5(2x - 1) = 6x + 9$  [3 marks]

$$10x - 5 = 6x + 9$$

$$10x - 14 = 6x$$

$$4x = 14$$

$$x = 3.5$$

$x = 3.5$

Do not write outside the box

S7

28 Solve  $5(2x-1) = 6x+9$  [3 marks]

~~10x~~

$$10x - 1 = 6x + 9$$

$$10x = 6x + 10$$

$$10x - 6x = 10$$

$$4x = 10$$

$$x = 2.5$$

$x = 2$

Do not write outside the box

S8

28 Solve  $5(2x-1) = 6x+9$  [3 marks]

$$5(2x-1) = 6x+9$$

$$5(2x) = 6x+10$$

$$10x = 6x+10$$

$$-10 = 4x$$

$$\div 4 \div 4 = x = 1.25$$

$x = 1.25$

Do not write outside the box

## Any questions?



## Resources

Take advantage of our extra resources in the 'Plan', 'Teach' and 'Assess' sections of our website.

### GCSE Mathematics

8300

Because of the impact of Coronavirus (COVID-19) there are some changes to how GCSE Mathematics will be assessed in 2022. [Find out more.](#)

Find all the information, support and resources you need to deliver our specification.

**Teaching from:** September 2015

**Exams from:** June 2017

**QAN code:** 601/4608/4

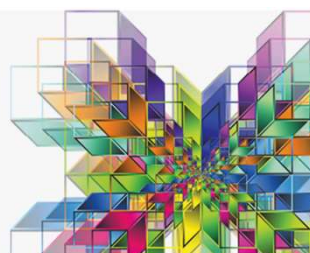
[Specification](#)

[Planning resources](#)

[Teaching resources](#)

[Assessment resources](#)

[Key dates](#)





## Get in touch

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Our friendly team will be happy to support you between 8am and 5pm, Monday to Friday.

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[aqa.org.uk](http://aqa.org.uk)



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## Thank you

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